



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

January 25, 2007

Mr. J. A. Stall
Senior Vice President Nuclear and Chief Nuclear Officer
Florida Power and Light Company
P. O. Box 14000
Juno Beach, FL 33408-0420

SUBJECT: ST. LUCIE NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT
05000335/2006005, 05000389/2006005

Dear Mr. Stall:

On December 31, 2006, the US Nuclear Regulatory Commission (NRC) completed an inspection at your St. Lucie Plant Units 1 and 2. The enclosed integrated inspection report documents the inspection findings which were discussed on January 3, 2007 with Mr. Johnston and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one NRC identified finding and two self-revealing findings of very low safety significance (Green). Two of these findings were determined to involve a violation of NRC requirements. Additionally, a licensee-identified violation which was determined to be of very low safety significance is listed in Section 4OA7 of this report. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these violations as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the St. Lucie facility.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARs) component of NRC's document

FP&L

2

system ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Michael E. Ernstes, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket Nos.: 50-335, 50-389
License Nos.: DPR-67, NPF-16

Enclosure: Inspection Report 05000335/2006005, 05000389/2006005
w/Attachment - Supplemental Information

cc w/encl: (See page 3)

system ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Michael E. Ernstes, Chief
 Reactor Projects Branch 3
 Division of Reactor Projects

Docket Nos.: 50-335, 50-389
 License Nos.: DPR-67, NPF-16

Enclosure: Inspection Report 05000335/2006005, 05000389/2006005
 w/Attachment - Supplemental Information

cc w/encl: (See page 3)

PUBLICLY AVAILABLE NON-PUBLICLY AVAILABLE SENSITIVE NON-SENSITIVE
 ADAMS: Yes ACCESSION NUMBER: ML070260030

OFFICE	RII:DRP	RII:DRP	RII:DRS	RII:DRS	RII:DRS	RII:DRS	RII:DRP
SIGNATURE	TLH4	SPS	GBK1	HJG1	AND	NJG1	SON
NAME	THoeg	SSanchez	GKuzo	HGepford	ANielsen	JGriffis	SNinh
DATE	01/25/2007	01/25/2007	01/17/2007	01/17/2007	01/17/2007	01/18/2007	01/19/2007
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

cc: w/encl:

William E. Webster
Vice President, Nuclear Operations
Florida Power & Light Company
Electronic Mail Distribution

Gordon L. Johnston
Site Vice President
St. Lucie Nuclear Plant
Florida Power & Light Company
Electronic Mail Distribution

Christopher R. Costanzo
Plant General Manager
St. Lucie Nuclear Plant
Electronic Mail Distribution

Bill Parks
Operations Manager
St. Lucie Nuclear Plant
Electronic Mail Distribution

Terry L. Patterson
Licensing Manager
St. Lucie Nuclear Plant
Electronic Mail Distribution

Mark Warner, Vice President
Nuclear Operations Support
Florida Power & Light Company
Electronic Mail Distribution

Rajiv S. Kundalkar
Vice President - Nuclear Engineering
Florida Power & Light Company
Electronic Mail Distribution

Seth B. Duston
Training Manager
St. Lucie Ocean Drive
Florida Power & Light Company
Electronic Mail Distribution

M. S. Ross, Managing Attorney
Florida Power & Light Company
Electronic Mail Distribution

Marjan Mashhadi, Senior Attorney
Florida Power & Light Company
Electronic Mail Distribution

William A. Passetti
Bureau of Radiation Control
Department of Health
Electronic Mail Distribution

Craig Fugate, Director
Division of Emergency Preparedness
Department of Community Affairs
Electronic Mail Distribution

J. Kammel
Radiological Emergency
Planning Administrator
Department of Public Safety
Electronic Mail Distribution

Douglas Anderson
County Administrator
St. Lucie County
2300 Virginia Avenue
Ft. Pierce, FL 34982

Distribution w/encl: (See page 4)

Report to J. A. Stall from Michael E. Ernstes dated January 25, 2007.

Distribution w/encl:

B. Moroney, NRR

B. Mozafari, NRR

C. Evans (Part 72 Only)

L. Slack, RII EICS

OE Mail (email address if applicable)

RIDSNRRDIRS

PUBLIC

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-335, 50-389

License Nos.: DPR-67, NPF-16

Report Nos.: 05000335/2006005, 05000389/2006005

Licensee: Florida Power & Light Company (FPL)

Facility: St. Lucie Nuclear Plant, Units 1 & 2

Location: 6351 South Ocean Drive
Jensen Beach, FL 34957

Dates: October 1 - December 31, 2006

Inspectors: T. Hoeg, Senior Resident Inspector
S. Sanchez, Resident Inspector
G. Kuzo, Senior Health Physicist (Section 2OS1, 4OA1)
H. Gepford, Senior Health Physicist (Section 2PS1)
A. Nielsen, Health Physicist (Section 2PS3)
J. Griffis, Health Physicist (Section 2OS3)

Approved by: Michael Ernstes
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000335/2006-005, 05000389/2006-005; 10/01/2006 - 12/31/2006; St. Lucie Nuclear Plant, Units 1 & 2; Problem Identification and Resolution of Problems; Radiation Monitoring Instrumentation and Protective Equipment; and Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Equipment.

The report covered a 3-month period of inspection by resident inspectors and an announced inspection by region based radiation protection specialists. Three Green findings, two of which were non-cited violations (NCV), were identified. The significance of most findings is identified by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. A self-revealing finding was identified for failure to correct a known deficiency associated with a turbine building cooling water system piping connection with a history of leakage and leak repairs. Specifically, previous pipe repairs replaced aluminum bronze piping with carbon steel which was in contrast with system design documents which specified the pipe material as aluminum bronze or Monel 400 as shown in piping design drawing 2998-C-124. As a result, a dissimilar metal galvanic corrosion cell was created followed by severe corrosion and failure of a threaded connection, severe system leakage, and a rapid downpower of the reactor plant.

The finding is greater than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because the finding was associated with the equipment performance attribute of the Initiating Events Cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors evaluated the finding using IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." The Initiating Events Cornerstone column of the work sheet was used to determine the transient initiator did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be unavailable. Consequently, the finding is considered to be of very low safety significance (Green). A contributing cause of the finding is related to the cross-cutting area of PI&R, specifically the component of Corrective Action Program in that the licensee did not thoroughly evaluate the piping leakage problem to ensure the resolutions addressed the cause of the leakage. (Section 4OA2)

Enclosure

Cornerstone: Occupational Radiation Safety

- Green. A self-revealing non-cited violation (NCV) of 10 CFR 20.1501(a) was identified for failure to conduct radiation surveys of the Unit 1 (U1) control room ventilation outside intake air. From March 31, 2006 to October 28, 2006, the 'B' U1 Control Room Outside Air Intake (CROAI) monitor sample pump was valved out of the monitor sample path due to a failed breaker. This monitor functions to survey the air supplied to the U1 control room for airborne radioactive contamination, and realigns the control room ventilation to a recirculating mode in the event of a high radiation alarm. This issue was entered into the licensee's corrective action program.

The finding is greater than minor because it is associated with the Occupational Radiation Safety Cornerstone attribute of Plant Facilities/Equipment and Instrumentation and it affected the cornerstone objective, in that not surveying control room air could result in increased operator exposure during accidents. Using the Occupational Radiation Safety Significance Determination Process (SDP), the inspectors determined that the finding was of very low safety significance (Green) because it did not involve a substantial potential for overexposure. Specifically, the U1 CROAI monitors and their automatic ventilation realignment function were not necessary to meet General Design Criteria (GDC) 19 for control room personnel doses as specified in Appendix A to 10 CFR Part 50 during accident conditions, and other operational radiation monitors remained available to provide an automatic actuation signal for the U1 ventilation system realignment. (Section 2OS3)

Cornerstone: Public Radiation Safety

- Green. The inspectors identified a NCV of 10 CFR 20.1302(b) for failure to perform accurate calculations of airborne effluent releases to demonstrate that the maximally exposed individual did not exceed the annual dose limit. Specifically, during the period of March 17, 2004 to October 4, 2006, the flow rate of the Unit 2 Fuel Handling Building (U2 FHB) exhaust fans exceeded that used to calculate the effluent release rate, resulting in a non-conservative dose calculation assessment for members of the public. This finding was entered into the licensee's corrective action program.

This finding is greater than minor because it is associated with the Public Radiation Safety Cornerstone attribute of Program and Process and affected the cornerstone objective of assuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. The finding was evaluated using the Public Radiation Safety SDP and was determined to be of very low safety significance (Green) because it did not prevent the licensee from assessing doses, and offsite doses from gaseous effluents during the time period in question did not exceed Appendix I to 10 CFR Part 50 criteria. This finding has a cross-cutting aspect in the area of human performance because

Enclosure

the procedure used to calculate the effluent activity released did not contain accurate and up-to-date information regarding the U2 FHB ventilation flow rates, resulting in inaccurate calculation of effluent releases. (Section 2PS1)

B. Licensee-Identified Violations

One violation of very low safety significance, which was identified by the licensee, has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. The violation and corrective actions are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Both units operated at or near full Rated Thermal Power (RTP) for the entire inspection report period except for minor power changes for testing. On October 13, 2006, Unit 2 reactor power was reduced to 60 percent due to a turbine building cooling water leak. Unit 2 was returned to full power on October 14, 2006.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors reviewed and verified licensee actions taken in accordance with their procedural requirements prior to the onset cold weather. The inspectors observed plant conditions and evaluated those conditions using criteria documented in licensee procedure ADM-04.03, "Cold Weather Preparations." The inspectors performed site walkdowns and plant tours to verify the licensee had made the required preparations. The inspectors performed reviews of plant exterior areas vulnerable to cold weather conditions which included the following areas:

- Unit 1 and Unit 2 Auxiliary Feedwater Systems (AFW)
- Unit 2 Emergency Diesel Generators (EDG)

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Partial Walkdowns

a. Inspection Scope

The inspectors conducted four partial equipment alignment verifications of the safety-related systems listed below to review the operability of required redundant trains or backup systems while the other trains were inoperable or out of service (OOS). The inspectors looked to identify any discrepancies that could impact the function of the system, and therefore, potentially increase risk. These inspections included reviews of applicable Technical Specifications (TS), plant lineup procedures, operating procedures, and piping and instrumentation drawings (P&ID), which were compared with observed equipment configurations. The inspectors also reviewed applicable reactor control operator (RCO) logs; equipment out of service (OOS) and operator workaround (OWA)

Enclosure

lists; active temporary system alterations (TSA); and outstanding condition reports (CRs) regarding system alignment and operability.

- 2A EDG with 2B OOS
- 1C Intake Cooling Water (ICW) Pump with 1B ICW Pump OOS
- 2A High Pressure Safety Injection (HPSI) Pump with 2B HPSI Pump OOS
- 1A/2A Startup Transformers (SUT) with 1B/2B SUTs OOS

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

The inspectors performed a detailed alignment verification of the Unit 1 Reactor Protection System (RPS) using Circuit and Wiring Diagram 8770-B-327 and applicable system training guides to walkdown and verify equipment alignment. The inspectors reviewed relevant portions of the Updated Final Safety Analysis Report (UFSAR) and TS. This detailed walkdown also verified electrical power requirements, component labeling, and associated support systems status. The walkdown also included evaluation of system components to verify that: 1) wiring and terminal board assemblies did not show evidence of wear; 2) electrical cabinet meters and indications were normal; 3) component foundations were not degraded. Furthermore, the inspectors examined OOS lists; active open work orders (WO); the RPS system health report; and open CRs that could affect system alignment and operability.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

Fire Protection - Tours

a. Inspection Scope

The inspectors conducted tours of the nine areas listed below to verify they conformed with licensee procedure AP-1800022, Fire Protection Plan. The inspectors specifically examined any transient combustibles in the areas and any ongoing hot work or other potential ignition sources. The inspectors also assessed whether the material condition, operational status, and operational lineup of fire protection systems, equipment and features were in accordance with the Fire Protection Plan. Furthermore, the inspectors evaluated the use of any compensatory measures being performed in accordance with the licensee's procedures and Fire Protection Plan.

- Unit 1 Emergency Core Cooling System (ECCS) Pipe Tunnel
- Unit 1 Fuel Handling Building (FHB) Area 48
- Unit 2 FHB Area 48
- Unit 1 Motor Generator Sets 19.5' Elevation
- 2A EDG Room
- Unit 2 Component Cooling Water (CCW) Building
- Unit 2 ICW Pump Area
- Unit 1 CCW Surge Tank Room
- Unit 1 Charging Pump Area

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

Internal Flooding

a. Inspection Scope

The inspectors reviewed UFSAR Section 3.4, Water Level (Flood) Design and UFSAR Table 3.2-1, Design Classification of Structures, System and Components for the Unit 1 ECCS Pipe Tunnel. Equipment potentially affected by a flood in this area included several safety-related motor operated valves associated with the HPSI, Low Pressure Safety injection (LPSI), and Containment Spray (CS) systems. The inspectors also reviewed procedure 1-ONP-24.01, Reactor Auxiliary Building Flooding, and verified certain actions required to be taken could be accomplished as written. The inspectors also verified the corrective action program (CAP) was being used to identify equipment issues that could be impacted by potential internal flooding.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

Resident Inspector Quarterly Review

a. Inspection Scope

The inspectors observed and assessed licensed operator actions during a simulator requalification evaluation. During this simulator evaluation, the inspector witnessed the operating crew respond to a simulated security event concurrent with a loss of offsite power. The inspector also reviewed simulator physical fidelity. The inspector specifically evaluated the following attributes related to the operating crews' performance:

- Clarity and formality of communication
- Prioritization, interpretation, and verification of alarms
- Control board operation and manipulation, including high-risk operator actions
- Oversight and direction provided by operations supervision, including ability to identify and implement appropriate TS actions, regulatory reporting requirements, and emergency plan actions and notifications
- Effectiveness of the post-evaluation critique

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

Quarterly Evaluation

a. Inspection Scope

The inspectors reviewed the reliability and deficiencies associated with the two systems listed below, including associated CRs. The inspectors verified the licensee's maintenance effectiveness efforts met the requirements of 10 CFR 50.65 and licensee Administrative Procedure ADM-17.08, Implementation of 10 CFR 50.65, Maintenance Rule. The inspectors focused on the licensee's system functional failure determination, a(1) and a(2) classification determination, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors also attended applicable expert panel meetings, and interviewed responsible engineers. The inspectors reviewed associated system health reports, and the licensee's goal setting and monitoring requirements.

- Unit 1 ECCS Ventilation System
- Unit 1 ICW System

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the risk assessments for the following six Systems, Structures, and Components (SSCs), or a combination thereof, that were non-functional due to planned and/or emergent work. The inspectors also walked down and/or reviewed the scope of work to evaluate the effectiveness of licensee scheduling, configuration control, and management of online risk in accordance with 10 CFR 50.65(a)(4) and applicable licensee program procedure ADM-17.16, Implementation of the Configuration Risk Management Program. The inspectors interviewed responsible Senior Reactor

Operators on-shift, verified actual system configurations, and specifically evaluated results from the online risk monitor (OLRM) for the combinations of OOS risk significant SSCs listed below:

- 2B SUT and 2C ICW Pump OOS
- 1B Charging Pump, Ultimate Heat Sink (UHS) Valve SB-37-2, and Unit 1 Control Room Emergency Ventilation System (CREVS) OOS
- 1C AFW Pump, Fan HVS 4B, and Fan HVE 9B OOS
- 1B Instrument Air Compressor (IAC), 1B Boric Acid Makeup Tank (BAMT), and 1B EDG OOS
- 2A EDG, and 2A HPSI/LPSI Pumps OOS
- 1B ICW Pump, Valve MV-07-2B, and 1C CCW Pump OOS

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following four CR interim dispositions and operability determinations to ensure that operability was properly supported and the affected SSCs remained available to perform its safety function with no increase in risk. The inspectors reviewed the applicable Updated Final Safety Analysis Report (UFSAR), and associated supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim disposition.

- CR 06-28050, 2A Battery Degraded
- CR 06-30320, Containment Fan Coolers
- CR 06-33045, TCB-7 Fail to Close
- CR 06-34081, HVS 4B Damper

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed licensee procedures QI-3-PSL-1, Design Control, ENG-QI-1.7, Design Input Verification, ADM-17.11, 10 CFR 50.59 Screening, and observed part of the licensee's activities to implement a design change that modified the Unit 2 HVE-13 A/B Fan Room Floor Drains. The licensee installed permanent covers on the floor drains to seal the control room ventilation envelope from the adjacent auxiliary building to provide positive pressure in the control room following a design basis accident. The

inspectors reviewed the associated 10 CFR 50.59 screening against the system design basis documents to verify that the modifications had not affected system operability and availability. The inspectors reviewed selected ongoing and completed work activities to verify that installation was consistent with design drawing ENG-05103-001.

- MEP 05103 HVE-13 A/B Fan Room Floor Drains

b. Findings

No findings of significance were identified

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors witnessed and reviewed Work Order (WO) post maintenance test (PMT) activities of the six risk significant SSCs listed below. The following aspects were inspected: (1) Effect of testing on the plant recognized and addressed by control room and/or engineering personnel; (2) Testing consistent with maintenance performed; (3) Acceptance criteria demonstrated operational readiness consistent with design and licensing basis documents such as TS, UFSAR, and others; (4) Range, accuracy and calibration of test equipment; (5) Step by step compliance with test procedures and/or work orders (WO), and applicable prerequisites satisfied; (6) Control of installed jumpers or lifted leads; (7) Removal of test equipment; and, (8) Restoration of SSCs to operable status. The inspectors also reviewed problems associated with PMTs that were identified and entered into the licensee's CAP.

- WO #35019032, Replace 2B4 4160 Volt Breakers
- WO #36016567, Repair UHS Valve SB-37-2
- WO #36004562, 2B EDG Volt Regulator Fluctuating
- WO #36016575, Install New Air Dryer System on 2B EDG
- WO #36016575, Install New Air Dryer System on 2A EDG
- WO #36013536, Repair 1B ICW Pump Pedestal

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors witnessed portions of the following six surveillance tests and monitored personnel conducting the tests as well as equipment performance, to verify that testing was being accomplished in accordance with applicable operating procedures. The test data was reviewed to verify it met TS, UFSAR, and/or licensee procedure requirements. The inspectors also verified that the testing effectively demonstrated the systems were

operationally ready, capable of performing their intended safety functions, and that identified problems were entered into the licensee's CAP for resolution. The tests included one inservice test (IST).

- 2-OSP-25.02, Containment Fan Cooler Motor Operability Run
- 2-0700052, Auxiliary Feedwater Actuation System (AFAS) Relay Testing
- 2-2200050B, 2B EDG Code Run
- 2-0400053, Engineered Safeguards Features Actuation System (ESFAS) Relay Testing
- OP-3200051, At Power Determination of Moderator Temperature Coefficient and Power Coefficient Test
- OP-1-0010125B, ECCS Sump Valve Stroke Test

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors continued to periodically screen active Temporary System Alterations (TSA) for risk significant systems. The inspectors examined the TSA listed below, including a review of the technical evaluation and its associated 10 CFR 50.59 screening. The TSA was compared to the system design basis documentation to ensure that: (1) the modification did not adversely affect operability or availability of other systems; (2) the installation was consistent with applicable modification documents; and, (3) did not affect TS or require prior NRC approval. The inspectors also observed accessible equipment related to the TSA to verify configuration control was maintained.

- 1-06-012, Valve V07214 Plug Assembly

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

a. Inspection Scope

On November 15, 2006, the inspectors observed a quarterly EP drill of the licensee's Emergency Response Organization (ERO) for personnel in the simulator and operations support center (OSC). During this drill the inspectors assessed licensee performance to determine if proper emergency classification, notification, and protective action

Enclosure

recommendations were made in accordance with EP procedures. The inspectors evaluated the adequacy of the post drill critique conducted in the Technical Support Center.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Controls to Radiologically Significant Areas

a. Inspection Scope

Access Controls Licensee program activities for monitoring workers and controlling access to radiologically significant areas and tasks were inspected. The inspectors evaluated procedural guidance; directly observed implementation of administrative and established physical controls; assessed worker exposures to radiation and radioactive material; and appraised radiation worker and technician knowledge of, and proficiency in implementing radiation protection program activities.

During the onsite inspection, radiological controls for completed and ongoing maintenance activities were observed and discussed. Reviewed tasks included a Unit 2 (U2) 'at power' entry and Unit 1 (U1) resin transfer activities. The evaluations included, as applicable, Radiation Work Permit (RWP) details; use and placement of dosimetry and air sampling equipment; electronic dosimeter (ED) set-points, and monitoring and assessment of worker dose from direct radiation and airborne radioactivity source terms. In addition, the effectiveness of licensee dose and contamination controls during the previous U2 End-of-Cycle (EOC) 16 outage was evaluated. The effectiveness of established controls were assessed against occupational doses received, identified personnel contamination events, and, as applicable, radiation survey results. Recent changes to physical and administrative controls and their implementation for locked-high radiation area (LHRA) locations and for storage of highly activated material within the U1 and U2 Spent Fuel Pool (SFP) locations were evaluated through discussions with licensee representatives, direct observations and record reviews.

Occupational workers' adherence to selected RWPs and Health Physics Technician (HPT) proficiency in providing job coverage were evaluated through direct observations, review of selected exposure records and investigations, and interviews with licensee staff. Select occupational exposure data associated with direct radiation, potential radioactive material intakes, and from discrete radioactive particle (DRP) or dispersed skin contamination events identified from October 1, 2005, through November 2, 2006, were reviewed and assessed independently. Proficiency of HPT job performance was evaluated through direct observation of staff during job coverage and routine surveillance activities.

Enclosure

During the week of October 30, 2006, radiological postings and physical controls for access to designated high radiation (HRA) and LHRA locations within the U1 and U2 SFP and Reactor Auxiliary Building (RAB) areas were evaluated during facility tours. In addition, the inspectors independently measured radiation dose rates and evaluated established posting and access controls for selected U1 and U2 RAB locations. Program changes for LHRA and Very High Radiation (VHRA) key controls were reviewed and discussed with cognizant licensee representatives. Recent contamination control issues associated with the U1 Emergency Core Cooling System (ECCS) pipe tunnel were reviewed and discussed in detail.

Radiation protection program activities were evaluated against 10 CFR 19.12; 10 CFR 20, Subparts B, C, F, G, H, and J; Updated Final Safety Analysis Report (UFSAR) details in Section 11, Radioactive Waste Management and Section 12, Radiation Protection; Technical Specification (TS) Sections 6.8.1, Procedures and Programs, 6.11, Radiation Protection Program, and 6.12, High Radiation Area; and approved licensee procedures. Licensee guidance documents, records, and data reviewed within this inspection area are listed in Section 2OS1 and 4OA1 of the attachment.

Problem Identification and Resolution Licensee Corrective Action Program (CAP) documents associated with access controls to radiologically significant areas were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with Nuclear Administrative Procedure (NAP) 204, Condition Reporting, Revision (Rev.) 9. Licensee Condition Report (CR) documents associated with access controls, personnel monitoring instrumentation, and personnel contamination events were reviewed. Licensee audits, self-assessments and CR documents reviewed and evaluated in detail during inspection of this program area are identified in Sections 2OS1, and 4OA1 of the attachment.

The inspectors completed twenty-one of the specified line-item samples detailed in Inspection Procedure (IP) 71121.01.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03)

a. Inspection Scope

Radiation Monitors The operability, availability, and reliability of selected area radiation monitor (ARM) and continuous air monitor (CAM) equipment used for routine and accident monitoring activities were reviewed and evaluated. The inspectors directly observed ARM equipment material condition and installed configurations where accessible. Current calibration data for the U2 Containment High Range Monitors (CHRM), the U2 Containment Isolation Signal (CIS) Monitors, U1 Spent Fuel Pool Area

Monitors, and the U1/U2 Control Room Outside Air Intake (CROAI) monitors were reviewed and discussed with responsible personnel.

Program guidance, monitor performance, and equipment material condition were reviewed against details documented in 10 CFR Parts 20 and 50; U1 UFSAR Section 12.1.4, Area Monitoring and Section 12.2.4, Airborne Radioactivity Monitoring; U2 UFSAR Section 12.3.4, Area Radiation and Airborne Radioactivity Monitoring; and approved licensee procedures. Reviewed documents are listed in Section 2OS3 of the attachment.

Personnel Survey Instrumentation Current program guidance, including calibration and operation procedures, and its implementation to maintain operability and accuracy of selected personnel survey instruments, were reviewed and evaluated. Instrument selection and operability determinations conducted by HPT staff prior to performing selected radiological surveys and monitoring were reviewed and discussed. Conduct of daily source checks for teletector survey meters were observed, and the results compared to specified tolerances. Responsible staff's knowledge and proficiency regarding on-site instrumentation calibration activities were evaluated through interviews, record reviews, and direct observation of source calibrations of selected portable instrumentation. The inspectors interviewed an Health Physics supervisor regarding the licensee's program for the use of electronic dosimeter (ED) equipment. The inspectors reviewed current calibration data for selected personnel survey instruments and assessed operability of various portable survey instruments staged or in use by the HP staff. Inspectors reviewed the calibrations for a REM-500 neutron survey meter (Serial Number (S/N) 240), an RO-20 ion chamber (S/N 4330), and an air sampler (S/N 6817) used by HPTs providing job coverage during an at-power entry into the U2 Containment Building.

Operability and analysis capabilities of the licensee's whole-body counter (WBC), personnel contamination monitor (PCM), and Portal Monitor (PM) equipment were reviewed and evaluated. Reviewed PCM and PM detectors included equipment staged at the RCA and the Protected Area (PA) exit points. For selected WBC, PCM, and PM equipment, current calibration and recent operational/performance test surveillance data, as applicable, were evaluated. The inspectors observed and discussed the conduct and results of a daily WBC source check with the responsible dosimetry technician.

Licensee activities associated with personnel radiation monitoring instrumentation were reviewed against UFSAR Section 12; TS Sections 6.11 and 6.12; 10 CFR 20.1204 and 20.1501; and applicable licensee procedures listed in Section 2OS3 of the attachment.

Respiratory Protection - Self-Contained Breathing Apparatus (SCBA) The licensee's respiratory protection program guidance and its implementation for SCBA use were evaluated and discussed with plant personnel. The number of available SCBA units and their general material and operating condition were observed during tours of the Control Room and RAB storage locations. Current records associated with supplied air quality for staged SCBA equipment were evaluated. In addition, U1 control room operators

Enclosure

were interviewed to determine their level of knowledge of available SCBA equipment storage locations, proper use, bottle change-out, and availability of prescription lens inserts, if required.

Program guidance, performance activities, and equipment material condition were reviewed against details documented in 10 CFR Part 20; Regulatory Guide (RG) 8.15, Acceptable Programs for Respiratory Protection, Rev. 1; and applicable licensee procedures. Reviewed guidance documents and applicable records are listed in Section 2OS3 of the attachment.

Problem Identification and Resolution Issues identified through selected CAP documents including department self-assessments, audits, and CRs associated with ARM equipment, portable radiation detection instrumentation, and respiratory protective program activities were reviewed and assessed. The inspectors assessed the licensee's ability to characterize, prioritize, and resolve the identified issues in accordance with NAP 204, Condition Reporting, Rev. 9. Licensee audits, self-assessments and CR documents reviewed and evaluated in detail during inspection of this program area are identified in Sections 2OS3 of the attachment.

The inspectors completed nine of the specified line-item samples detailed in IP 71121.03.

b. Findings

Introduction. A Green self-revealing non-cited violation (NCV) of 10 CFR 20.1501(a) was identified for failure to survey the Unit 1 (U1) control room ventilation intake air for radioactivity.

Description. During a review of Condition Report (CR) 2006-30922, inspectors determined that a work request was generated on March 31, 2006, to determine why the U1 Control Room Outside Air Intake (CROAI) 'B' light was not lit on the system select control panel. This indicator light should have been lit because the 'B' train of the U1 CROAI Radiation Instrument System (RIS) - 26-47 was assumed to have been in service at that time. A preliminary evaluation determined that the light bulb was functional, and there was no indication of a low fault on the control room panel for RIS-26-47. Because the flow fault indicator light was not lit, and no local flow readout was available on the monitor skid, the licensee assumed that monitor was operational, and the system remained aligned to the U1 'B' CROAI train until October 28, 2006. At that time, the Instrument and Control (I&C) staff identified that a failed relay prevented the bulb from lighting. In addition, I&C staff determined that the relay failure also caused the valves in the sample path supplying air to the RIS-26-47 monitor to fail closed. Thus, the U1 'B' CROAI system had not been sampling and subsequently monitoring the outside intake air provided to the control room for radioactivity as designed for approximately seven months. Upon the discovery, the licensee immediately selected the 'A' CROAI system (RIS-26-46) on the control panel to resume sampling and monitoring of the outside air provided to the control room.

Analysis. The inspectors determined that the licensee's failure to survey U1 control room ventilation air for potential radiological hazards was a performance deficiency because the licensee is required to conduct surveys in accordance with 10 CFR 20.1501(a). The design function of RIS-26-47 is to automatically realign control room ventilation upon high radiation alarm in order to mitigate potential operator doses during accident conditions. In addition, Off-Normal Operating Procedure 1-ONP-25.02 requires operators to use the CROAI radiation monitors to select between north and south outside air intakes during a radiological incident (e.g. the monitor is used to determine which intake is the least radioactive) to ensure doses to control room personnel are ALARA. From discussions with responsible system engineers, the inspectors noted that for U1, realignment of the CROIA ventilation system is not necessary to meet the General Design Criteria (GDC) 19 dose values for control room personnel specified in Appendix A to 10 CFR Part 50. In addition, other radiation monitors would function to realign the U1 ventilation system to a recirculation mode for specific design base accident scenarios. The finding is more than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of Plant Facilities/Equipment and Instrumentation, and affected the associated cornerstone objective to ensure adequate protection of worker health and safety from exposure to radioactive materials. Specifically, the failure to conduct adequate evaluation of CROAI equipment affected the licensee's ability to monitor control room intake air for airborne radioactivity for an extended period of time. The issue was determined to be of very low safety significance (Green) because the issue would not have resulted in any exposures exceeding established design basis dose criteria for control room personnel.

Enforcement. 10 CFR 20.1501(a) requires, in part, that each licensee shall make or cause to be made, surveys that are reasonable under the circumstances, to evaluate potential radiological hazards. Contrary to the above, between March 31, 2006 and October 28, 2006, the licensee failed to survey control room ventilation outside intake air as a result of unidentified equipment malfunctions.

The failure to survey the U1 control room outside intake air was determined to be of very low safety significance (Green) and has been entered into the licensee's corrective action program under CR No. 2006-30922. The finding is being treated as an NCV consistent with Section VI.A of the NRC Enforcement Policy: NCV 50-335/2006005-001, Failure to Survey U1 Control Room Outside Intake Air.

Cornerstone: Public Radiation Safety

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

a. Inspection Scope

Effluent Monitoring and Radwaste Equipment During inspector walk-downs, accessible sections of the liquid and gaseous radioactive waste (radwaste) processing and effluent systems were assessed for material condition and conformance with system design diagrams. The inspection included the various drain tanks; waste monitor tanks; liquid waste system pumps, valves, and piping; gas decay tanks; liquid waste discharge

Enclosure

monitor (RE-6627); U2 Plant Vent Particulate/Iodine/Gas monitor skids A/B (RM-26-13/14); U1 Plant Vent Particulate/Iodine/Noble Gas monitor (RSC-26-1); U2 Plant Vent Wide Range Gas monitor (RIM-26-90); U2 Fuel Building Vent Particulate/Iodine/Gas monitor skid (RM-26-12); and associated airborne effluent sample lines. The inspectors interviewed chemistry supervision and engineering personnel regarding radwaste equipment configuration and effluent monitor operation.

The inspectors reviewed performance records and calibration results for selected radiation monitors, flowmeters, and air filtration systems. For monitors RIS-26-31/32 (U1 Containment Atmosphere process monitor), RSC-26-1, RE-6627, RM-26-13/14, RIM-26-90, RY-23910/23920 (U1 Steam Generator Blow Down monitor), and RM-26-18 (Waste Management Gas Discharge), the inspectors reviewed the two most recent calibration records, including the functional/flow checks as appropriate. The inspectors reviewed the out-of-service (OOS) monitors from July 2004 to September 2006, and verified that required compensatory sampling was performed for selected systems. The inspectors also reviewed U1 and U2 radiation monitor system health reports for October 2006. The two most recent surveillances on the U1 Fuel Handling Building Exhaust (HVE-16A/16B) and U2 Reactor Auxiliary Building Exhaust (HVE-10A/10B) systems were reviewed. Performance and operations of the systems were reviewed and discussed with cognizant licensee personnel.

Installed configuration, material condition, operability, and reliability of selected effluent sampling and monitoring equipment were reviewed against details documented in the following: 10 CFR Part 20; RG 1.21, Measuring, Evaluating and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials In Liquid and Gaseous Effluents from Light-Water Cooled Nuclear Power Plants and RG 1.143 Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light Water Cooled Reactors; TS Section 6.8.1; the Offsite Dose Calculation Manual (ODCM), Rev. 28; and UFSAR Chapter 11. Procedures and records reviewed during the inspection are listed in Section 2PS1 of the attachment.

Effluent Release Processing and Quality Control (QC) Activities The inspectors directly observed and evaluated chemistry staff proficiency in conducting weekly plant vent surveillance activities, including the particulate filter and charcoal cartridge change-out and noble gas/tritium collection from the U2 Plant Vent A/B and Fuel Handling Building PIG skids, as applicable. In addition, the inspectors discussed the process for performing liquid and gaseous releases with chemistry personnel. Chemistry technician proficiency in processing and counting effluent samples was evaluated.

QC activities associated with gamma spectroscopy were discussed with count room technicians and Chemistry supervision. The inspectors reviewed quality control charts from October 28, 2005 to October 31, 2006 for High Purity Germanium (HPGe) detectors No. 1, 2, and 3, and reviewed licensee procedural guidance for count room QC activities. The inspectors also reviewed QC charts for the liquid scintillation counter and alpha counter. The inspectors reviewed calibration records for HPGe detector Nos. 1 and 2 (select counting geometries). In addition, results of the radiochemistry

cross-check program analyses performed in November 2005 were reviewed and discussed with cognizant licensee individuals.

Selected portions of procedures for effluent sampling, processing, and release were evaluated for consistency with licensee actions. Three gaseous and one liquid release permits were reviewed against ODCM specifications for pre-release sampling and effluent monitor setpoints. The inspectors discussed performance of pre-release sampling and analysis and release permit generation with chemistry technicians. The inspectors reviewed the 2004 and 2005 Annual Radiological Effluent Release Reports to evaluate reported doses to the public and ODCM changes. The inspectors reviewed a selection of monthly, quarterly, and annual dose assessments from liquid and gaseous releases for the periods July 1, 2004 to July 31, 2004; July 1, 2005 to July 31, 2005; and September 1, 2006 to September 31, 2006. Dose calculations to members of the public were evaluated and discussed with cognizant licensee personnel.

Current licensee programs for monitoring, tracking, and documenting the results of both routine and abnormal liquid releases to the onsite and offsite surface and ground water environs were reviewed and discussed in detail. The inspectors reviewed selected 10 CFR 50.75(g)(1) reports associated with abnormal liquid releases and corrective actions initiated since Calendar Year 1977 to evaluate the potential onsite/offsite environmental impact of significant leakage/spills from onsite systems, structures, and components. Recent groundwater monitoring initiatives and radionuclide concentration results for approximately 55 onsite groundwater monitoring wells and two onsite retention ponds were reviewed in detail. Initial results of samples collected from the wells identified detectable tritium concentrations in 14 of the wells, concentrations ranging from 500 to 4350 picocuries per liter. Potential effects on doses to workers and to offsite individuals, or on the potential for elevated concentrations in offsite surface water and groundwater environmental matrices were determined to be negligible. The specific wells were located in the vicinity the U1 refueling water tank (RWT) and waste monitor tank (WMT) equipment area, the turbine lube oil area, and the current paint shop location. Preliminary reviews of baseline monitoring data and 10 CFR 50.75(g) files identified two areas of contaminated subsurface water with the potential sources resulting from either unintended releases of liquids from the U1 RWT/WMT equipment area, and/or from the potential migration of tritium from the east retention pond which, in the past, had received contaminated liquids inadvertently released into the east storm drain system. Additional monitoring activities to identify and characterize potential source terms and plume characteristics are ongoing. Licensee current capabilities and routine surveillances to minimize and rapidly identify any new leaks from tanks containing radioactive liquids, processing lines, and SFPs were reviewed and discussed in detail.

Observed task evolutions, count room activities, and offsite dose results were evaluated against details and guidance documented in the following: 10 CFR Part 20 and Appendix I to 10 CFR Part 50; ODCM; RG 1.21; RG 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50 Appendix I; RG 1.33, Quality Assurance Program

Requirements; and TS Section 6.0. Procedures and records reviewed during the inspection are listed in Section 2PS1 of the attachment.

Problem Identification and Resolution A selection of CRs and two audits associated with effluent release activities were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve selected issues in accordance with licensee procedure NAP-204, Condition Reporting, Rev. 9. Reviewed documents are listed in Section 2PS1 of the attachment.

The inspectors completed eleven of the specified line-item samples detailed in IP 71122.01.

b. Findings

Introduction. A Green NRC-identified NCV of 10 CFR 20.1302(b) was identified for failure to perform accurate calculations of airborne effluent releases to demonstrate that the maximally exposed offsite individual did not exceed the annual dose limit.

Description. The Offsite Dose Calculation Manual (ODCM), Rev. 28, stated the maximum Unit 2 (U2) Fuel Handling Building (FHB) process flow exhaust with fans HVE-15, HVE-16, and HVE-17 in operation was approximately 31,584 cubic feet per minute (cfm) and used that value to demonstrate calculation of the total body dose rate to the public for releases from the U2 FHB. During a review of September 2006 continuous release permits generated for U2 FHB vent, the inspectors determined that the FHB exhaust flow used to perform calculations of the effluent activity released with each of the FHB fans in operation was 25,700 cfm. This value, specified in Chemistry Operating Procedure COP-01.06, Processing Gaseous Waste, corresponds to the minimum fan capacity specified for the U2 FHB ventilation system in Section 9.4 of the U2 UFSAR. The inspectors further determined that from the period of March 17, 2004 to October 4, 2006, the flow rate of the U2 FHB exhaust fans was measured to be 33,974 cfm to 36,068 cfm. Because the flow rate is a simple multiplier in the dose calculation, the use of a flow rate lower than the actual effluent release rate resulted in a non-conservative error (underestimate) in the dose calculations of approximately 30 percent. Because the licensee's airborne effluent releases were significantly less than established regulatory limits, and because the U2 FHB was only one release point that contributed to the total activity released, it was determined that no regulatory release limits were exceeded.

The licensee determined that the cause of the elevated flow rates for the U2 FHB fans was the failure of a fan controller which adjusted a vortex damper positioner on HVE-15, HVE-16A, and HVE-16B. Because the controllers were obsolete, in October 2006 the licensee installed a temporary system alteration to stem clamp the vortex dampers into a position such that the measured flow matched the UFSAR design flow. This resulted in the actual flow rate being equal to that being used in COP-01.06.

Analysis. The inspectors determined that the failure to accurately calculate the airborne effluent dose from the U2 FHB is a performance deficiency. The finding is greater than minor because it is associated with the Public Radiation Safety Cornerstone attribute of

Enclosure

Program and Process and affected the cornerstone objective of assuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. The finding was evaluated using the Public Radiation Safety Significance Determination Process (SDP). This issue was related to the effluent release program, but did not result in a failure to assess dose, as the licensee had other means to assess doses from gaseous releases. In addition, the licensee did not exceed the dose limits in 10 CFR 20.1301(d) or design criteria specified in Appendix I to 10 CFR 50. For these reasons, the issue was determined to be of very low safety significance (Green). This finding has a cross-cutting aspect in the area of human performance because the procedure used to calculate the effluent activity released did not contain accurate and up-to-date information regarding the U2 FHB ventilation flow rates, resulting in inaccurate calculation of effluent releases.

Enforcement. 10 CFR 20.1302(b) requires the licensee to demonstrate by measurement or calculation that the total effective dose equivalent to the individual likely to receive the highest dose does not exceed the annual dose limit for members of the public. Contrary to the above, the licensee failed to perform accurate calculations of airborne effluent releases from the U2 FHB from March 17, 2004 to October 4, 2006. The incorrect calculation resulted in an underestimate of the dose to the maximally exposed individual member of the public.

The failure to accurately calculate the airborne effluent dose from the U2 FHB was determined to be of very low safety significance (Green) and has been entered into the licensee's corrective action program (CR 2006-32234). This violation is being treated as an NCV consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000335,389/2006005-002, Failure to Calculate Accurate Airborne Effluent Doses to Members of the Public.

2PS3 Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program

a. Inspection Scope

REMP Implementation The inspectors observed routine sample collection and surveillance activities as required by the licensee's ODCM. The inspectors noted the material condition and operability of airborne particulate and iodine sampling stations at monitoring locations H-08, H-14, H-30, H-34, and H-12 (control). Environmental thermoluminescent dosimeter equipment at locations N -1, NNW-5, NW-10, WNW-5, WSW-2, SSE-5, SSE-10, and SE-1 were checked for material condition. Collection of broadleaf vegetation was observed at sample locations H-51, H-52, and H-59 (control). In addition, collection of surface water samples was observed at locations H-15 and H-59 (control). The inspectors determined the current location of selected air samplers, TLDs, broadleaf vegetation sample points, and surface water sample points using NRC global positioning system instrumentation. Land use census results, changes to the ODCM, and sample collection/processing activities were discussed with environmental technicians.

The inspectors reviewed the last two calibration records for selected environmental air sampler gas meters. The inspectors also reviewed the 2004 and 2005 Radiological Environmental Operating Reports and discussed any missed samples and anomalous measurements within licensee staff. In addition, results of Calendar Year's 2004 and 2005 interlaboratory cross-check program and applicable procedures for environmental sample collection and processing were reviewed. Selected environmental measurements were reviewed for consistency with licensee effluent data, evaluated for radionuclide concentration trends, and compared with detection level sensitivity requirements.

The inspectors also reviewed correspondence between the licensee and the State of Florida regarding the safety of contaminated dredge spoils taken from the discharge canal and stored onsite. Records and surveys of the spoils pile kept in accordance with 10 CFR Part 50.75(g) for use in future decommissioning activities also were reviewed.

Procedural guidance, program implementation, and environmental monitoring results were reviewed against: 10 CFR Parts 20 and 50; TS Section 6; ODCM; RG 4.15, Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment; and RG 4.8, Environmental Technical Specifications for Nuclear Power Plants. Documents reviewed are listed in Section 2PS3 of the attachment.

Meteorological Monitoring Program During a daily surveillance of the meteorological tower, the inspectors observed the physical condition of the tower and discussed equipment operability and maintenance history with a technician. The inspectors compared locally generated meteorological data with information available to control room operators. For the meteorological measurements of wind speed, wind direction, and temperature, the inspectors reviewed calibration records for applicable tower instrumentation and evaluated measurement data recovery for 2004 and 2005.

Licensee procedures and activities related to meteorological monitoring were evaluated against: ODCM; FSAR Section 2.3; ANSI/ANS-2.5-1984, Standard for Determining Meteorological Information at Nuclear Power Sites; and Safety Guide 23, Onsite Meteorological Programs. Documents reviewed are listed in Section 2PS3 of the attachment.

Unrestricted Release of Materials from the Radiologically Controlled Area (RCA) The inspectors observed surveys of material and personnel released from the RCA using Small Article Monitor (SAM), PCM, and PM instruments. The inspectors also observed source checks of these instruments and discussed equipment sensitivity and release program guidance with licensee staff. To evaluate the appropriateness and accuracy of release survey instrumentation, radionuclides identified within recent waste stream analyses were compared with radionuclides used in current calibration sources and performance check sources. The inspectors also reviewed the last two calibration records for selected SAM, PCM, and PM instruments.

Licensee programs for monitoring materials and personnel released from the RCA were evaluated against 10 CFR Part 20 and IE Circular 81-07, Control of Radioactively

Contaminated Material. Reviewed documents are listed in Section 2PS3 of the attachment.

Problem Identification and Resolution The inspectors reviewed selected CRs and a self-assessment in the areas of environmental monitoring, meteorological monitoring, and release of materials. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with procedure NAP-204, Condition Reporting, Rev. 9. Documents reviewed are listed in Section 2PS3 of the attachment.

The inspectors completed ten of the specified line-item samples detailed in IP 71122.03.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

40A1 Performance Indicator Verification

a. Inspection Scope

The inspectors sampled licensee data for the performance indicators (PIs) listed below. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Rev. 4, were used to screen each data element.

Occupational Radiation Safety Cornerstone The inspectors reviewed the Occupational Exposure Control Effectiveness PI results for the Occupational Radiation Safety Cornerstone from October 2005 through September 2006. For the assessment period, the inspectors reviewed electronic dosimeter alarm logs and CRs related to exposure significant area controls. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Report section 2OS1 contains additional details regarding the inspection of controls for exposure significant areas. Documents reviewed are listed in Sections 2OS1 and 4OA1 of the attachment.

Public Radiation Safety Cornerstone The inspectors reviewed the Radiological Control Effluent Release Occurrences PI results for the period of July 1, 2005 through September 30, 2006. For the assessment period, the inspectors reviewed monthly and quarterly dose calculations to the public, out-of-service effluent radiation monitors, selected compensatory sampling data, and selected CRs related to Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual issues. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Documents reviewed are listed in Sections 2PS1 and 4OA1 of the attachment.

The inspectors completed the two specified radiation protection line-item samples detailed in IP 71151.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution of Problems

.1 Review of Items Entered into the Corrective Action Program

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and in order to help identify repetitive equipment failures or specific human performance issues for followup, the inspectors performed screening of items entered into the licensee's CAP. This was accomplished by reviewing the CR summaries from daily printed reports and periodically attending CR oversight group meetings.

.2 Semi-Annual Review to Identify Trends

a. Inspection Scope

As required by inspection procedure 71152, Identification and Resolution of Problems, the inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on condition reports associated with the erection of temporary ladders and structures comprised of scaffold material. The review also included followup inspection of an NRC-identified violation issued in St. Lucie Inspection Report 2006-04. The inspectors' review nominally considered the six-month period of July thru December 2006, although some examples expanded beyond those dates when the scope of the trend warranted. Corrective actions associated with a sample of the issues identified in the licensee's trend report were reviewed for adequacy. The inspectors also evaluated the trend report specified in licensee procedure NAP-204, Condition Reporting.

b. Assessment and Observations

No findings of significance were identified. The inspectors reviewed several condition reports associated with the erection of temporary structures consisting of scaffold material over or near safety-related equipment. The inspectors determined that maintenance personnel were erecting structures built of scaffold material, but were not being used as work platforms. Administrative Procedure ADM-27.11, Scaffold Control, did not include in the definition, such structures, and therefore these structures did not receive Engineering review for seismic adequacy. The licensee initiated a condition report (CR 06-28919) to identify and correct the adverse trend in the scaffold program. The inspectors determined the licensee actions taken to be appropriate and timely.

.3 Annual Sample: Review of Rapid Downpower to 60% Due to Turbine Building Cooling Water Leak

a. Inspection Scope

The inspectors selected condition report CR 2006-29284, "Down Power to 60% to Remove 2B TCW Heat Exchanger From Service," for a detailed review and discussion with the licensee. The inspectors reviewed the CR to ensure that the description of the condition was accurate and properly captured in their CAP; that the condition was properly classified and prioritized; and that the corrective actions were appropriate, timely, and consistent with the safety significance of the condition. The inspectors evaluated the CR in accordance with the licensee's corrective action process as specified in licensee procedure NAP-204, "Condition Reporting."

b. Findings and Observations

Introduction. A Green self-revealing finding was identified for failure to correct a known deficiency associated with a turbine building salt water cooling system piping connection with a history of leakage and leak repairs. Previously known thread leakage and inadequate repairs were made to threaded connections on a vacuum breaker portion of piping located on the saltwater outlet side of the 2B Turbine Cooling Water Heat Exchanger. The assembly consisted of a pipe nipple, elbow, and check valve V-21526, all part of piping section 2-CW-222. The pipe nipple and elbow were made of dissimilar materials resulting in galvanic corrosion and pipe thread wastage. As a result, the piping connection fell off causing a large saltwater leak and consequent rapid down power of the reactor plant.

Description. On October 13, 2006, the Unit 2 operators performed a rapid down power from 100% to 60% to remove the 2B Turbine Cooling Water Heat Exchanger from service. The heat exchanger was removed from service when a two-inch vacuum breaker piping assembly nipple separated at a threaded connection causing it to break away resulting in a large saltwater leak in the turbine building. The vacuum breaker is located on the saltwater outlet side of the 2B Turbine Cooling Water Heat Exchanger. Unit 2 operators entered off normal procedure 2-ONP-22.01, Rapid Down Power, to prevent the potential overheating of turbine cooling water heat loads. The affected heat exchanger was isolated and reactor power maintained at 60% until repairs were made.

Subsequent inspection of the failed piping revealed that the subject pipe nipple was carbon steel and the pipe elbow was aluminum bronze resulting in galvanic corrosion. The system design documents specify the nipple material as aluminum bronze or Monel 400 as shown in piping design drawing 2998-C-124. Carbon steel was not specified for use in piping 2-CW-222. The licensee reviewed past work order history and determined that the aluminum bronze pipe nipple was replaced with a carbon steel pipe nipple in November, 2001. It was not determined why carbon steel was used in place of aluminum bronze. The piping assembly began to show signs of leakage in 2005 when a soft patch was placed on the pipe nipple due to it leaking. It was repaired in May 2006 when the pipe nipple was replaced like for like which was carbon steel with carbon steel

in contrast to design document 2998-C-124 which required aluminum bronze or Monel 400. In July, 2006, a drip pocket was placed under the leaking piping. On October 13, the pipe nipple separated from the elbow resulting in a rapid down power event.

The licensee's apparent cause evaluation determined that the cause of the failed piping was due to the carbon steel pipe threads corroding while in contact with the brass elbow due to a cathodic reaction between dissimilar metals.

Analysis. The inspectors determined that failing to repair a known leaking salt water piping system using the required specified designed materials to be a performance deficiency requiring a risk significance evaluation. The inspectors determined the finding was more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because the finding was associated with the equipment performance attribute of the Initiating Events Cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations.

The inspectors evaluated the finding using IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." The Initiating Events Cornerstone column of the work sheet was used to determine the transient initiator did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be unavailable. Consequently, the finding is considered to be of very low safety significance (Green). A contributing cause of the finding is related to the cross-cutting area of PI&R, specifically the component of Corrective Action Program in that the licensee did not thoroughly evaluate the piping leakage problem to ensure the resolutions addressed the cause of the leakage.

Enforcement. The licensee failing to repair a known leaking saltwater piping system using the specified designed materials was not an activity affecting quality subject to 10 CFR Part 50, Appendix B. Therefore, while a performance deficiency existed, no violation of regulatory requirements occurred. This condition was considered a finding of very low safety significance: FIN 05000389/2006005-003, Failure to Correct a Known Deficiency Associated With a Turbine Building Salt Water Cooling System Configuration Issue.

.4 Annual Sample: Review of Operator Work Around Associated With Unit 2 CVCS Ion Exchanger Operation

a. Inspection Scope

The inspectors selected condition report 2006-32601, "TCV-2223 Swings Affect on Reactivity," for a detailed review of the effects of operations personnel having to bypass the ion exchanger when changing the charging pump lineup due to letdown temperature swings and resulting reactor reactivity changes. The inspectors reviewed the potential for misoperation of the system and the affect of the workaround on the operators ability to respond in a correct and timely manner to plant transients and accidents. The

inspectors evaluated the CR in accordance with the licensee's corrective action process as specified in licensee procedure NAP-204, "Condition Reporting."

b. Findings

No findings of significance were identified.

4OA3 Event Followup

.1 (Closed) LER 05000335/2005-005-00, Multiple Main Steam Safety Valves As-Found Setpoints Outside Technical Specification Limits.

On October 16, 2005, Unit 1 was in Mode 1 and holding at 68% power when testing of six MSSVs revealed three valves (V8207, V8210, and V8212) that lifted outside the TS limit. The licensee's TS require that each MSSV actuate within plus one to minus three percent of the nameplate value to ensure the secondary system pressure will be limited to 110% of its design pressure of 1000 pounds per square inch absolute (psia) during the most severe anticipated system operational transient. The licensee determined the cause of the high as-found settings for valves V8210 and V8212 was setpoint drift, and either setpoint drift or micro-galling for valve V8207. Valves V8210 and V8212 were adjusted, and V8207 was overhauled and reinstalled during the refueling outage. This licensee-identified finding involved a violation of TS 3.7.1.1, Turbine Cycle Safety Valves. The enforcement aspects of the violation are discussed in Section 4OA7. This LER is closed.

4OA5 Other Activities

.1 (Closed) NRC Temporary Instruction (TI) 2515/169, Mitigating Systems Performance Index (MSPI) Verification

a. Inspection Scope

During this inspection period, the inspectors completed a review of the licensee's implementation of the Mitigating Systems Performance Index (MSPI) guidance for reporting unavailability and unreliability of monitored safety systems in accordance with Temporary Instruction 2515/169.

The inspectors examined surveillances that the licensee determined would not render the train unavailable for greater than 15 minutes or during which time the system could be promptly restored through operator action and therefore, are not included in unavailability calculations. As part of this review, the recovery actions were verified to be uncomplicated and contained in written procedures.

On a sample basis, the inspectors reviewed operating logs, work history information, maintenance rule information, corrective action program documents, and surveillance procedures to determine the actual time periods the MSPI systems were not available due to planned and unplanned activities. The results were then compared to the

baseline planned unavailability and actual planned and unplanned unavailability determined by the licensee to ensure the data's accuracy and completeness. These documents were reviewed to ensure MSPI component unreliability data determined by the licensee identified and properly characterized all failures of monitored components. The unavailability and unreliability data was compared with performance indicator data submitted to the NRC to ensure it accurately reflected the performance history of these systems.

b. Findings and Observations

No findings of significance were identified. The licensee accurately documented the baseline planned unavailability hours, the actual unavailability hours and the actual unreliability information for the MSPI systems. No significant errors in the reported data were identified, which resulted in a change to the indicated index color. No significant discrepancies were identified in the MSPI basis document which resulted in: (1) a change to the system boundary, (2) an addition of a monitored component, or (3) a change in the reported index color.

.2 (Closed) Unresolved Item (URI) 05000335, 389/2006-04-02, Limited Scope 10 CFR Part 21 Program Assessment

This URI was left open pending additional inspection. The inspectors conducted an additional inspection to review this issue and determined that the licensee had not evaluated equipment stored in the warehouse as spares for a potential defect. However, no actual safety impacts were identified. This issue has been addressed by the licensee and this failure to comply with 10 CFR Part 21 requirements constitutes a violation of minor significance that is not subject to enforcement action in accordance with Section IV of the NRC's enforcement policy. Therefore, this URI is considered closed.

4OA6 Meetings, Including Exit

On January 3, 2007, the resident inspectors presented the inspection results to Mr. Gordon Johnston and other members of your staff, who acknowledged the findings. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

On November 3, 2006, the inspectors discussed results of the onsite radiation protection inspection with Mr. Robert Hughes, Acting Plant Manager, and other responsible staff. The inspectors noted that proprietary information was reviewed during the course of the inspection but would not be included in the documented report.

An additional telephone exit was conducted on November 16, 2006, to discuss final evaluations of data provided to address two unresolved items associated with the adequacy of calibrations for neutron monitoring instrumentation and breathing air surveillances previously discussed during the November 3, 2006, exit. The inspectors noted that review of additional data resolved the previously identified concerns with no

additional findings of significance identified.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a NCV.

Technical Specification 3.7.1.1 requires that all main steam line code safety valves be operable with lift settings as specified in TS Table 4.7-1. Contrary to this, on October 16, 2005, three MSSVs lifted outside the TS limits of plus one to minus three percent. The licensee entered this issue into their CAP as CR 2005-28173. This finding was determined to have very low safety significance because it only affected the initiating events cornerstone and does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

D. Albritton, Operations Supervisor
E. Armando, Site Quality Manager
D. Calabrese, Emergency Preparedness Supervisor
D. Cecchett, Licensing Engineer
C. Costanzo, Plant General Manager
M. Danford, Performance Improvement Department Supervisor
K. Frehafer, Licensing Engineer
R. Hughes, Site Engineering Manager
B. Jacques, Security Manager
G. Johnston, Site Vice President
R. McDaniel, Fire Protection Supervisor
R. Merle, Projects Manager
L. Neely, Work Control Manager
W. Parks, Operations Manager
T. Patterson, Licensing Manager
G. Swider, Systems Engineering Manager
J. Tucker, Maintenance Manager
R. Walker, Emergency Preparedness
S. Wisla, health Physics Manager

NRC Personnel

B. Moroney, NRR Senior Project Manager
S. Ninh, Region II Senior Project Engineer

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened/Closed

05000335/2006005-001	NCV	Failure to Survey Unit 1 Control Room Outside Intake Air (Section 2OS3)
05000335,389/2006005-002	NCV	Failure to Calculate Accurate Airborne Effluent Doses to Members of the Public (Section 2PS1)
05000389/2006005-003	FIN	Failure to Correct a Known Deficiency Associated With a Turbine Building Salt Water Cooling System Configuration Issue (Section 4OA2)

Closed

05000389/2005005-00	LER	Multiple Main Steam Safety Valves As-Found Setpoints Outside Technical Specification Limits (Section 4OA3)
05000335,389/2515/169	TI	Mitigating Systems Performance Index (MSPI) Verification (Section 4OA5)
05000335,389/2006004-003	URI	Limited Scope 10 CFR Part 21 Program Assessment (Section 4OA5)

LIST OF DOCUMENTS REVIEWED**Section 20S1: Access Controls to Radiologically Significant Areas**Procedures, Manuals, and Guidance Documents

Health Physics Procedure (HPP) - 1, Preparing Radiation Work Permits, Revision (Rev.) 28

HPP-3, High Radiation Areas, Rev. 19D

HPP-4, Scheduling of Health Physics Activities, Rev. 31

HPP-20, Area Radiation and Contamination Surveys, Rev. 24B

HPP-30, Personnel Monitoring, Rev. 40

HPP-41, Movement of Material and Equipment, Rev. 22A

HP- 49A, Transfer of Radioactive Bead Resins, Rev. 20

HP- 74, Access Control Using Alarming Dosimeters, Rev. 7

HP- 112, Multibadging, Rev. 22A

HP- 116, Electronic Personnel Dosimeter Program, Rev. 17

Administrative Procedure (ADM) -05/02, HP Controls of Spent Fuel Pool Non-SNM, Rev. 1C

Operating Procedure 1 - -520020, Radioactive Resin Replacement, Rev. 54

Radiation Work Permit (RWP) 06-158, Unit 1 19.5 Foot (') Reactor Auxiliary Building (RAB) Ion Exchange Valve Gallery/ Spent Resin Transfer (SRT) Hallway/ Drumming Room Locked High Radiation Area (LHRA); transfer 1C/1D WIX Ion Exchange Resins to Spent Resin Tank, Rev. 0

RWP 06-3819, Unit 2 Reactor Containment Building (RCB) 23' at Electrical Penetration (Very High Radiation Area Access Allowed) Alpha Channel CIS Detector (RD-26-3)/ Cable: Trouble Shoot Repair Test, Rev. 0

Nuclear Administrative Procedure (NAP) - 204, Condition Reporting, Revision (Rev.) 9

Records and Data Reviewed

RWP 2006-0158 Daily Transaction Dose Report Data as of November 2, 2006

RWP 2006-3819 Daily Transaction Dose Report Data as of November 2, 2006

Total Effective Dose Equivalent Data October 1, 2005 - November 2, 2006,

Personel Contamination Assessment Data, October 1, 2005 - November 2, 2006, Selected Samples

Health Physics Form HPP-30.12, Radiation Exposure Extension Requests, Selected Samples October 1, 2005 through November 2, 2006.

Spent Fuel Pool Maps (Present Configuration) Unit 1 (11/23/05) and Unit 2 6/7/06;

Spent Fuel Pool Non-SNM Item Inventory Log Sheets: Unit 1, as of 10/30/06; Unit 2, 10/30/06

Monthly Radiation Surveys for Unit 1 ECCS Yard Sump - Elevation (EL) -.5 Foot conducted:

01/27/05; 03/28/05; 04/26/05; 05/23/05; 07/01/05; 07/12/05; 08/18/05; 09/07/05; 10/04/05;
11/22/05; 12/19/05; 01/30/06; 03/27/06; 04/30/06; 05/29/06; 06/23/06; 07/29/06; 08/31/06;
08/25/06;

CAP Documents

QSL-RP-05-07, Quality Assurance Audit, Radiation Protection Functional Area Audit, 08/05/05

2005-13873, Plant St Lucie Health Physics ALARA Self Assessment, 05/10/2005

2005-25170, Annual Radiation Protection Program Review and Assessment Recommendation Followup, 09/13/05

2006-18920, Locked High Radiation Area Access Controls, Quick Hit Self-Assessment, 06/22/06

Condition Report (CR) 2005-20060, Load Center found in clean area with loose contamination up to 3000 disintegration per minute per large area masslin, 07/20/05

CR 2005-33273, Workers Not Restricted in HIS-20 when Radiation Worker Training Expires

CR 2005-19904, Administrative Control of Keys for LHRA and VHRA weakness Identified, 2/18/05

CR 2005-17310, RP Instrument Source Disposal List, 07/18/05

CR 2006-15927, Individual Separated from EPD, Use of Wrong RWP, 05/22/2006

Section 20S3: Personnel Radiation Monitoring Instrumentation and Protective Equipment

Procedures, Instructions, and Guidance Documents

HP-13A, Operation of Portable Survey Instruments, Rev. 24

HP-13B, Calibration of Portable Count Rate Instruments, Rev. 16

HP-13C, Calibration of Portable Dose Rate Survey Instruments, Rev. 20

HPP-10, Multichannel Analyzers, Rev. 13A

HPP-61, Use of Respiratory Protective Equipment, Rev. 15C

HPP-62, Inspection and Maintenance of Respiratory Protection Equipment, Rev. 12A

HPP-64, Setup and Inspection of Breathing Air Purification Systems, Rev. 11A

HPP-66, Operation of the SCBA Fill Station, Rev. 0

NAP-204, Condition Reporting, Rev. 9

QI-12-PR/PSL-6, Health Physics Measuring and Test Equipment, Rev. 16D

1-IMP-26.24, Functional Testing of Control Room Outside Air Intake (CROAI) Monitors, Rev. 3A

1-IMP-26.57 Secondary Calibration of the CROAI Monitors, Rev. 10

1-IMP-26.58, Area Radiation Monitoring System (ARMS) Functional Test, Rev. 12

2-IMP-25.51, Digital High Range Radiation Monitor (DHRRM) Functional Test, Rev. 5D

1-NOP-26.02, Area Radiation Monitors, Rev. 0C
1-ONP-25.02, Ventilation Systems, Rev. 8
2-ONP-26.02, Area Radiation Monitors, Rev. 5
1-1220055, Calibration of Area Radiation Monitoring System (ARMS), Rev. 16
2-1120070, Containment High Range Radiation Monitor Calibration, Rev. 7
2-1220055, Calibration of Area Radiation Monitoring System (ARMS), Rev. 28
2-1400069, Calibration of the PSL-2 CROAI's, Rev. 10
Training Module 4721100, Don, Operate, and Remove the Scott 2.2 SCBA, Rev. 7
Initial Training Guide 4705100, Don, Operate and Remove the Scott 2.2 SCBA, Rev. 04
Lesson Plan for Initial Training 4702100, Don, Operate and Remove the Scott 2.2 SCBA, Rev. 6
Operations and Repair Manual, Model REM 500B Neutron Survey Meter, Rev. B3a
St. Lucie Technical Basis Document: Implementation of the HPI REM500 Neutron Survey Meter, 10/31/02
HP-13A, Operation of Portable Survey Instruments, Rev. 24
HP-13C, Calibration of Portable Dose Rate Survey Instruments, Rev. 19

Records and Data Reviewed

Work Order (WO) 33016334, TS/PM268084 Fuel Pool Rad Monitors - 18 mo Cal, 10/10/03
WO 35004996, TS/PM268084 Fuel Pool Rad Monitors - 18 mo Cal, 8/8/05
WO 33007399, PM2 091B/TS CROAI's RIM-26-62/66 Cal., 9/18/03
WO 34019891, PM2 091B/TS CROAI's RIM-26-62/66 Cal., 3/23/05
WO 34006814, PM2 091/TS CROAI's RIM-26-61/65 Cal., 5/22/05
WO 36010075, PM2 091/TS CROAI's RIM-26-61/65 Cal., 9/18/06
WO 33013636, FYP8085/TS CNTMT Hi Range Rad Monitor RIM-26-40/41 Cal., 01/21/05
WO 35002283, FYP8085/TS CNTMT Hi Range Rad Monitor RIM-26-40/41 Cal., 05/14/06
WO 34001312, CROAI Monitor Cals CH 46/47, 10/1/04
WO 35029675, CROAI Monitor Cals CH 46/47, 7/7/06
WO 33014746, FYP-8083 CIS RIM-26-3/4/5 Cal., 1/19/05
WO 35002778, FYP-8083 CIS RIM-26-3 Cal., 4/30/06
Calibration Data Sheet for Portable Air Sampler S/N 6817, 4/12/06
Calibration Data Sheet for Portable Air Sampler S/N 6817, 10/12/06
Calibration Data Sheet for RO-20 Ion Chamber S/N 4330, 7/6/05
Calibration Data Sheet for RO-20 Ion Chamber S/N 4330, 9/14/06
Calibration Data Sheet for REM-500 Neutron Survey Meter S/N 240, 3/22/06
Calibration Data Sheet for REM-500 Neutron Survey Meter S/N 240, 9/20/06
Calibration Packages for WBC System, 10/19/05 and 3/3/06
LCOTR Database Printout for Equipment Out of Service
Scott PosiChek3 Visual/Functional Test Results for multiple units, performed on 8/1/00, 9/12/02, and 9/22/04
Compressed Air/Gas Quality Testing Laboratory reports for CY2005 and CY2006
SCBA Qualifications and Training records for 2006 Operations Crew #2
HP-13A-3, Field Check Source Data Sheet for neutron check source: horizontal position (10/8/03, 3/23/05, 3/23/06); vertical position (9/21/04, 3/23/05, 3/23/06, 10/31/06)
HP-2, Instrument Calibration Data Sheet: REM 500 s/n 240 (3/22/06, 9/20/06)

CAP Documents

CR 2004-13054, Multiple RO-20 Survey Instruments failed the Source Response Check on the 0-500 mrem scale, 11/4/04
CR 2004-16176, Respirator physicals in question, 12/3/04
CR 2005-3789, Issue of respiratory equipment for the radiation control area, 2/2/05
CR 2005-34726, Inability of security to access certain portions of the plant due to not having any security officers SCBA/respirator qualified, 12/16/05
CR 2006-14657, No programmatic controls exist to prevent a compressor that has not been verified to supply grade "D" breathing air to the service or construction air system, 5/11/06
CR 2006-30922, Control Room Outside Air Intake radiation monitor found to not be sampling OAI, 10/28/06
CR 2006-31620, Improvement opportunity - Orientation of personnel while monitoring in portal monitors, 11/2/06
CR 2006-32359, Second quarter 2005 Grade D breathing air analysis (PSL Respiratory Program) records not available for review, 11/7/06
CR 2006-31691, Wrong source decay correction used in SAM calibration, 11/2/06

Section 2PS1: Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

Procedures, Instructions, and Guidance Documents

Offsite Dose Calculation Manual, Rev. 28
2004 St. Lucie Annual Radioactive Effluent Release Report
2005 St. Lucie Annual Radioactive Effluent Release Report
COP-07.05, Process Monitor Setpoints, Rev. 8A
COP-65.02, Effluent Grab Sampling, Rev. 14
COP-05.01, Chemistry Department QA/QC Program, Rev. 30
COP-01.05, Processing Aerated Liquid Wastes, Rev. 14
COP-01.06, Processing Gaseous Waste, Rev. 9
OP-1-0530021, Controlled Gaseous Batch Release to Atmosphere, Rev. 63
1-NOP-06.01, Controlled Liquid Release to the Circulating Water Discharge, Rev. 10A
St. Lucie Nuclear Plant System Health Report, Rad Monitoring, Units 1 and 2, Period 2006-3

Records and Data Reviewed

PSL-ENG-SENJ-06-0xx, Offsite Dose Calculation Manual Revision for Independent Spent Fuel Storage Installation Dewatering Outfalls, Draft Rev. 0
Calibration for HPGe Detector #1 (50 mm filter, 5/24/06; charcoal cartridge, 5/24/06; 30-cc glass sphere, 5/26/06
Calibration for HPGe Detector #2 (gas marinelli, 5/21/06; 1 liter marinelli, 5/22/06)
QC Control Charts (HPGe #1, #2, #3, liquid scintillation counter), 10/28/05-10/31/06
Temporary System Alteration 2-06-16-1/2/3 (U2 FHB HVE-15/16A/16B vortex damper)

FP&L St. Lucie Plant U1 and U2 Effluent Dose Reports: 7/1/04 to 7/31/04, 7/1/05 to 7/31/05, and 9/1/06 to 9/30/06

Process Monitor Surveillance Tests and Calibration records: RIM-26-90 (12/30/04, 8/7/06); RM-26-14 (11/5/04, 3/23/06); RM-26-13 (8/03/04, 4/20/06); RM-26-18 (4/28/04, 2/24/06); RY-23910/23920 (12/18/03, 7/15/05); RIS-26-31/31 (7/27/04, 9/29/05); RSC-26-1 (5/10/04, 3/8/06); RE-6627 (2/6/04, 10/3/05)

Ventilation System Surveillance Testing records: HVE-16A/16B (U1 FHB) (3/10/04, 9/8/05); HVE-10A/10B (U2 Reactor Aux Building) (3/15/04, 10/28/04, 3/15/06)

Gaseous Release Permits: 2-06-75C (8/28/06); 2-06-67C (8/15/06)

Continuous Gaseous Release Permits: U1 Plant Vent (8/1/06); U2 FHB (9/5/06, 9/12/06, 9/19/06, 9/26/06)

Liquid Release Permit: 1-06-39 (8/14/06)

Interlaboratory Cross-Check Analysis Results, 11/05

Event Data Sheets - 10 CFR 50.75(g) Issue Summaries:

Event Number (EN) 2005-003, Radioactive material identified in ORVCH and OPRZ drainage areas, 11/08/05; EN 2005-002, Dredge return water line rupture, 08/18/05

EN 2005-001, Evaluation of on-site dredge spoils. 06/20/05;

EN 2004-001, U1 RWT overfilled during drain down of U1 lower cavity, 04/13/04;

EN 2003-001, Leak of filter transfer cask during movement, 04/10/03;

EN 2002-002, Potentially contaminated water leaked from vacuum during transfer from U1 RCB to the SGVDTF, 10/18/02

EN 2002-001, Spill to roadway outside U1 drumming room during B/C Ion exchange sluice, 02/08/02

EN 2001-001, Breach of tygon tubing during 1A Monitor Storage Tank drainage, 09/20/01;

EN 2000-001, 12C Monitor Storage Tank Leak 100 Gallons, 07/20/00;

EN 1999-001, Identification of low-levels of licensed material identified in the U2 yard sump, 06/28/99;

EN 1998-003, RCP seal leak at U1 RCB equipment hatch, 11/14/98

EN 1998-002, Water leak from U2 RWT fill line, 06/30/98;

EN 1998-001, Release of contaminated water during sluicing of 2A Pre-concentrator ion exchanger to spent resin tank, 06/09/98;

EN 1995-001, U1 PWT overfilled resulting in release to east storm drain, 08/19/95

EN 1993-001, Leak identified in U1 RWT tank bottom, 06/15/93

EN 1992-001, Residual activity in East Storm Basin resulting from U1 RWT 1977 overflow event, 11/26/92;

EN 1982-001, Offsite release of contaminated sewage sludge, 09/13/82;

EN 1981-001, Over-pressurization of liner during resin transfer and resultant contamination at U1 RAB and EDG, 02/24/81;

EN 1977-001, U1 RWT over-filled during lowering of RCS level with resultant release to the storm drain systems, 04/06/77

CAP Documents

Radiation Protection Functional Area Audit, QSL-RP-05-07, August 2005

Chemistry and Effluents Functional Area Audit, QSL-CHM-06-03, April 2006

CR 2004-5958, Flow rates for U2 HVAC systems exceeded acceptance criteria limits, 3/15/04

CR 2005-24782, Radioactive particulate material found in plenum areas of 1-HEVE-16, 9/8/05

CR 2005-30742, V14500 leaks by seat and could be unmonitored radioactive leak, 11/8/05
CR 2006-3875, Adverse trend with radiation monitor calibrations, 2/10/06
CR 2006-4144, Revise ODCM to add note about stack flow meters, 2/13/06
CR 2006-5491, Evaluate if 30 minute waste monitor tank recirculation time is adequate, 2/24/06
CR 2006-7671, Scheduled start date for repair of RE-6627 liquid radioactive waste monitor will double required operations and chemistry personnel requirement for releases, 3/13/06
CR 2006-8887, U2 FHB flow rates exceed FSAR design allowable limits, 3/22/06
CR 2006-31880, Analytics crosschecks are not identified in Chemistry procedures, 11/3/06
CR 2006-32234, ODCM and EPIP HVAC flow values, 11/7/06
CR 2006-31598, Negative trends in as-found radiation monitor calibration data, 11/1/06
CR 2004-00954, Information Notice, Salem SFP Leakage, 03/05/04
CR 2006-10301, Tritium concentration found in radiation controlled area manhole, 04/03/06
CR 2006-10302, Tritium found in sample of vault below manhole 291, 04/01/06
CR 2006-10474, Tritium found in sample of vault below manhole 211, 04/04/06
CR 2006-10948, Low level tritium concentrations detected in control and indicator REMP sample locations, 04/26/06
CR 2006-15487, Small amounts of tritium found in turbine lube oil wells, 05/15/06
CR 2006-22389, Baseline onsite groundwater sampling identified 15 of 55 wells positive tritium results, 08/02/06
CR 2006-23760, Operations Department has no procedures or processes for handling tritium at St Lucie Plant, 08/17/06
CR 2006-24021, Operations and RP have determined source of tritium is the U1 yard sump, 8/24/06
CR 2006-24440, Multi-department effort to determine cause of tritium identified in ECCS sump and storm drain system, rollup of task team efforts, 8/24/06
CR 2006-25051, PSL1 Tritium action item list, 08/31/06 found in sample of vault below manhole 291, 04/01/06
CR 2006-24552, NRC Notification of Other Government Agencies regarding tritium detected in settling pond, 8/25/06
CR 2006-24559, Action for Engineering to evaluate need for addition U1 RWT inspections, 08/26/06

Section 2PS3: Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program

Procedures, Instructions, and Guidance Documents

Sampling Procedure (SP) - 1, Collection of Air Particulates and Radioiodines, Rev. 7
SP-4, Collection of Surface Water, Rev. 4
SP-5, Collection of Broadleaf Vegetation, Rev. 2
SP-12, Annual Land Use Census, Rev. 2
HPP-02, Calibration and Operation of the Bicon-NE Small Article Monitors (SAM), Rev. 11
NAP-204, Condition Reporting, Rev. 9

Records and Data Reviewed

2004 and 2005 Annual Radiological Environmental Operating Reports
2005 Annual Effluent Report
Letter from Mr. William Jefferson (St. Lucie Vice President) to Mr. William Passetti (Chief, State of Florida, Department of Health, Bureau of Radiation Control), 6/21/05
Letter from Mr. William Passetti to Mr. William Jefferson, 6/24/05
10 CFR Part 50.75(g) records concerning dredge spoils pile characterization
Environmental Air Sampler Gas Meter Calibration Spreadsheet, 12/1/05 - 9/22/06
Interlaboratory Crosscheck Results, 2004 and 2005
Work Order 34016557, Hire contractor to perform inspection of meteorological tower, 9/13/04
Meteorological Tower Instrument Calibrations, 12/17/05 and 6/4/06
Meteorological Data Percent Recovery, 2004 and 2005
SPM-906 (Portal Monitor) Calibration Data Sheets, Serial No. 906014, 12/13/05 and 6/12/06
IMP-9D (PCM) Calibration Data Sheets, Serial No. 280, 12/7/05 and 6/7/06
SAM Calibration Data Sheets, Serial No. 330, 2/7/06, 8/4/06, and 11/1/06

CAP Documents

2005 REMP Self-Assessment
CR 2004-04430, Meteorological tower shows signs of corrosion and structural wear, 7/19/04
CR 2005-02912, Meteorological tower data recorder needs replacement, 1/27/05
CR 2005-31023, Meteorological data lost after hurricane Wilma, 11/11/2005
CR 2006-10274, Contractor hired to evaluate structural integrity of meteorological tower, 4/3/06
CR 2006-27079, Gas meter improperly changed out with an uncalibrated meter, 9/25/06
CR 2006-27171, Air sampling station on temporary power longer than desired, 9/26/06
CR 2006-31691, Wrong source decay correction used in SAM calibration, 11/01/06

Section 40A1: Performance Indicator Verification

Occupational Exposure Control Effectiveness Data Sheets: 3rd Quarter 2005 through the 2nd Quarter 2006
EPD Dose/Dose Rate Alarms, October 1, 2005 through November 4, 2006
CR 2004-4711, Higher activity in 1A and 1B waste monitor tanks than expected, 7/23/04
CR 2006-5210, Radioactive liquid batch release volume calculation discrepancies, 2/22/06
CR 2005-31912, EPD Dose and Dose Rate Alarms Received by Contract Employee, 11/17/05
CR 2006-13104, EPD Dose Alarm during Multi-badge Entry, 04/30/06